

53 Seers & Sages

THE



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THE BIG ISSUE

AMILLIENIUM IS THE LARGEST unit of human culture. So, not surprisingly, the turn of a millennium tends to promote big thoughts about the future and our legacy to it. No doubt the biggest of these inheritances will be the implications of the current revolution in technology. Information technology is accelerating contemporary life to unprecedented speeds. Some

of us applaud this change, some fear it. But none of us can escape it. As the magazine of this revolution, *Forbes ASAP* asked fifty-three authors, from all walks of life and all points of view, to address what this revolution means to them. You may find their answers entertaining, stimulating, and sometimes infuriating. Together they are a record of how we live at Millennium's Turn.

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When Was the Real Techno-Revolution? "We live in an age in which rapid change is certain. We have lived in a century that has experienced more change than any other. Or so we believe."



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At the Cusp of the Evolutionary War "You won't find out about the possibilities of cyberspace by hearing about it on network television."

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"The mere multiplication of facts, however securely stored, however diversely categorized, does not assist but may actually detract from the ultimate effort a historian must make, which is to see the woods among the trees."

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Still Matters "It is impossible to exaggerate the growing reliance on electronic storage systems for research historians."

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"Every culture develops its own creation myth. The myth for Silicon Valley starts with the discovery of the transistor."



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"Information is the currency of democracy, and information age technologies can make information current, accurate, and inexpensive."

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"The record of history is clear: Though technological innovations have changed the way we live, they have not changed man's essential nature."



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Hot-Wired History... Unplugged

"Never confuse history with nostalgia. In its Greek origins, *historia* meant inquiry, and from Thucydides onwards, the past has been studied to understand its connections with the present."

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Overcoming the Fear of Change

"The technological and political changes buffeting the world are generating major industrial change paralleling that of the industrial revolutions in the eighteenth and nineteenth centuries."



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Challenge "The indestructible pillars of the industrial world, its ideas as well as its great institutions, have crumbled before the forces of the digital 'revolution.'"

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A Radically Different

World "There has never been a neutral technology. All technologies are power."



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"Life has friction, texture, distance; those inconvenient physical conditions are a part of human life that we'll miss sorely as we move into the digital environment."



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Global Village of Village Idiots "I write this with a pen and legal pad at a vacation redoubt in the wilderness of Quebec, far from computers, the Internet, and email urgencies."

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Cybersex Leaves Me Limp

"Somewhere in the wilds outside of Las Vegas, they are laying plans for the world's first cyberbrothel."



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The Morality and Metaphysics of Email "The way the new technology has affected my working life most directly has nothing to do with what I am producing."

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Remembrance of Things Past "As she moved toward the end of a long life, my mother quietly embarked on a process of de-acquisition."

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Virtual Reality Makes Everyone Principals "This is the ultimate in virtual reality: A smell of dung and honeysuckle and mowing wafts up from the farm below, with the soft *baaing* of sheep."

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The Future of Software Is Now "While the media hums with stories of the Internet, and how it's transforming the way we communicate, perhaps the missed story of our times is the revolution within the software industry."

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What Can Be Done, Will Be Done "I have a rule, one that was honed by more than thirty years in high tech.

It's simple. 'What can be done, will be done.' Like a natural force, technology is impossible to hold back. It finds its way no matter what obstacles people put in its place."

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Circling Back to the Small and Simple "George Orwell got it backward. Digital technology is not imposing bureaucracy but restoring a bygone social order. Far from shackling individuals, computers are liberating us."

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Steps to a Digital Networked Future "We are all hopelessly behind in taking advantage of a digital networked future. So what do we do? It makes more sense to focus on where the hockey puck is going, instead of where the puck's been."

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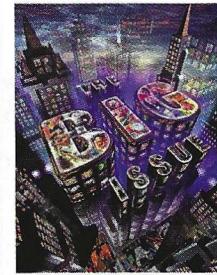
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ABOUT THE COVER



Cover artist Jim Ludtke built a three-dimensional city in cyberspace to make new an old idea of art director Tony Lane (a bird's-eye view of skyscraper lettering—first used on a 1980 Grammy-nominated album cover for Chicago XIII). Ludtke then "photographed" it from various angles to create the cover and the six section introductions using the following equipment and software: He created the 3D scenes on an Apple Macintosh 8100/80 and rendered everything on a 9500/120. He built the 3D models in Macromedia's Extreme 3D and imported the models into Electric Image's Electric Image Animation System to do the rendering. He used Adobe Photoshop to create a collage. The collage was then applied to the 3D models of the buildings and letterforms in Electric Image, where he set up a lighting scheme and camera angles and made the final renderings.



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Snail Mail: Forbes ASAP
One Lagoon Drive, Suite 250
Redwood City, CA 94065
Fax: 415-637-1987
Email: editor@forbesasap.com
web: www.forbesasap.com
or www.forbes.com

Contributors

Rich Karlgaard	George Gilder
Virginia Christian	Lee C. Patterson
Eric Pfeiffer	Virginia I. Postrel
Owen Edwards	Geoffrey Baum
Bill Walsh	Gregg Pernick
Tom Peters	Marilyn Wills
Michael S. Malone	Gary Andrew Poole
David Strom	Martha Rogers
Don Peppers	John Romeo
Andy Kessler	Peter Pallans
Michael Gianturco	Linda Byron Glucksman
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BILL HISTORY'S GREATEST BRAIN DRAIN FREZZA

"Civilization is the progress toward a society of privacy. The savage's whole existence is public, ruled by the laws of his tribe. Civilization is the process of setting man free from men." —Ayn Rand, 1943

INDIVIDUAL SOVEREIGNTY. Absolute ownership of oneself. This ideal has intrigued libertarians (with a small *l*) for generations. Unfortunately, only an incurable ideologue believes it will ever happen in the real world. But suppose a place existed where privacy was inherently assured? A place where coercive force, whether exerted by outlaws or by the state in the name of protecting us from outlaws, was physically impossible? A place where both the whims of tyrants and the will of the majority meant nothing?

What kinds of societies would emerge if the fabric of civilization could only be woven from the voluntary exchange of value for value? And how would large economic communities function if they could not appeal to a supreme authority prepared to use guns and clubs to enforce codes of conduct or rights of contract?

It's high time to start asking these questions. This hypothetical place is already under construction. We call it cyberspace, and at the rate things are going, much of the world's productive talent is going to move there over the next fifty years.

In cyberspace, you must learn a new code of social intercourse. You are free to stop listening to whomever you please, but you cannot make someone else shut up. Yes, you can try to dispatch jackbooted policemen to track down and yank out an antagonist's physical connection—if you happen to live in the same political sphere of influence. But invoking this remedy will be hard if you can't discover the identity of the offending party. As anonymous access methods mature, and the ability to create multiple pseudonymous accounts becomes more convenient, only those who choose to reveal their real-world identities will be at risk of nocturnal visits from armed enforcers.

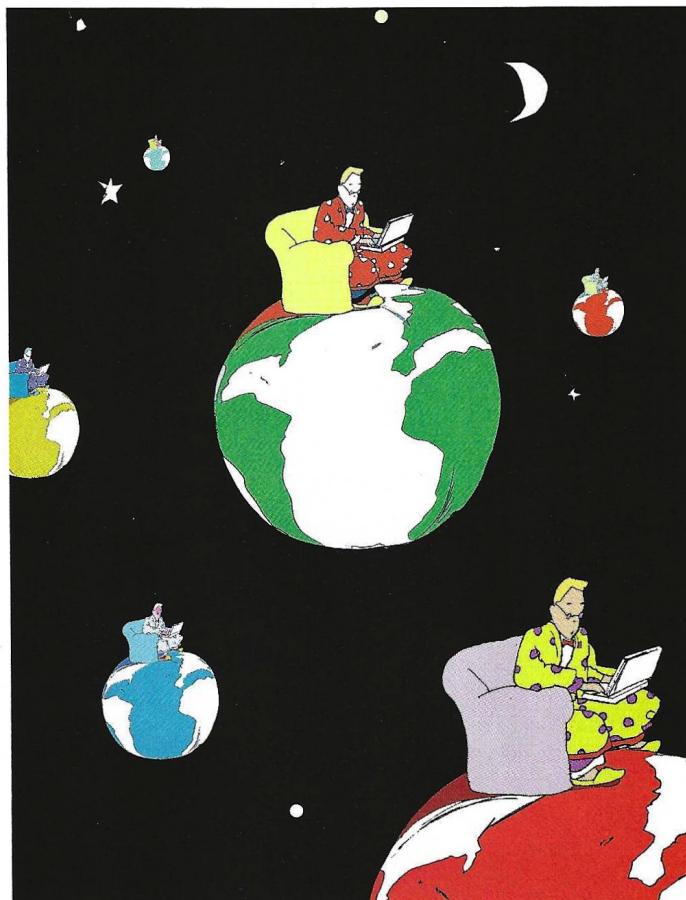
In cyberspace you learn that ever since cryptology escaped from the control of national security agencies it has been flourishing in the private domain. The latest techniques are available for the asking, a simple download away. This is more than a temporary headache for FBI chief Louis Freeh, implacable foe of the legions of terrorists who, we are told, are busily exchanging email messages plotting to blow up the World Trade Center. Because encryption techniques are based on combinatorial mathematics that are asymmetric, continual advances in low-cost processing power favor the code maker over the code breaker. Soon even the great national labs will be powerless to read encrypted messages produced by inexpensive consumer products.

Plug these into the Net behind a mask of anonymity, and privacy becomes not an abstract right but an algorithmic certainty.

The prospect of inviolable freedom of speech thrills civil libertarians. Their odd view of liberty is offended if they're denied access to dirty pictures, though they have no problem watching the state access your paycheck. These halfhearted freedom fighters will soon learn that censorship's demise is just a

trifle compared with what lies ahead.

When it reaches maturity, the Internet will do nothing less than dissolve the hoary grip of collectivism. How? As the Net's tentacles spread around the globe, supranational economic communities will arise behind the cryptographers' shield. Within these virtual communities, members will create and exchange anything that can be represented by a string of bits, that is, anything that is a product of the human mind. Alongside the work output of the vast majority of citizens in the developed countries, electronic money will invisibly ► 268



FREZZA

233 ◀ flow in all its rich new forms.

For the first time, individuals will be free to commit acts of commerce unmolested by the prying eyes and grasping hands of sovereign powers. Wealth will be created, invested, and stored in complete privacy. Docile acceptance of the state's right to unlimited access to our personal economic affairs, a heinous doctrine introduced with tax-the-rich schemes (and slowly expanded to bilk even the working poor), cannot survive a transition to cyberspace. When privacy permeates the world of electronic commerce, the interlinked process by which bankers, employers, and merchants are commanded to spy on their employees and customers will come to an end.

By providing a sanctuary where individuals can keep the fruits of their labor, cyberspace will entice humanity's most productive elements—its knowledge workers—into incrementally withdrawing from the visible economy. This silent exodus will grow into history's greatest brain drain. It will sap the vigor of the old order while fueling an explosion of laissez-faire capitalism that will make the Industrial Revolution look like the trial run it was.

The global Net is radically different from any means by which societies have ever been connected. Unlike the roads of ancient Rome, the ships of the British Empire, or the mass media of the twentieth-century welfare/warfare states, the Internet will galvanize commerce and spread culture but never serve as a handmaiden of the state. This distributed, self-organizing network of networks, devoid of centralized access control, is immune from domination by any single entity. It will work itself into the bowels of even the most autocratic regimes, giving those who would rule others nothing in return.

This makes the Internet a grave threat to the world's governing classes, particularly those addicted to the politics of income redistribution financed by progressive taxation. Alert defenders of the status quo have already begun fighting back. Have you wondered what is really motivating our federal government to work so hard to slow the export of strong encryption or to promote key-escrow schemes that create a back door into any transaction? Do the public explanations offered make any sense to you? Are you puzzled about the Clinton administration's effort to guide the development of the information superhighway while simultaneously orchestrating a propaganda campaign intended to paint cyberspace as a haven for pornographers, terrorists, and drug-money launderers? This paradoxical behavior makes a lot more sense when viewed as a coordinated policy to prevent an epidemic of privacy from subverting the fiscal authority of the State.

Concerted government action can slow things down, but short of globally nationalizing the computer and telecommunications industries, we have already passed the point of no return. The era of big government is indeed over, and technology will make sure it doesn't come back from the dead.

Not far ahead lies the unbounded opportunity society of cyberspace. Who among us will choose to live in a place where productive merit is king while envy must travel unarmed? ■

Bill Frezza is a columnist for CommunicationsWeek and Network Computing magazine and cofounder of the DigitalLiberty Forum (www.digitalib.org). He obtained his B.S. and M.S. in electrical engineering from MIT.